



Roy F. Weston, Inc.  
Suite 500  
750 East Bunker Court  
Vernon Hills, IL 60061-1450  
847-918-4000 • Fax 847-918-4055  
www.rfweston.com

5-17-02

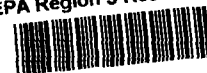
17 May 2002

Mr. Steve Faryan,  
U.S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

TDD: 0105-004

Document Control No.: 103-3A-ABRP

EPA Region 5 Records Ctr.



352962

Re: Review comments on the revised 12 April 2002, Removal Action Work Plan  
The Lockformer Company, Lisle, Illinois

Dear Mr. Faryan:

Roy F. Weston, Inc. (WESTON®) is pleased to submit the review comments on the revised Removal Action Work Plan (RAWP). Clayton Group Services of Downer Grove, Illinois, prepared the RAWP. The review of groundwater related sections in the work plan was not reviewed at this time. The review was focused for the soil (source) portion of the RAWP. The HASP also was not reviewed. The review comments for the document are grouped into general comments and specific comments. The review comments are provided below:

### GENERAL COMMENTS

1. The following comments from WESTON's 28 January 2002 letter were not adequately addressed:
  - a. In the general comments, WESTON asked to add a removal action objectives (RAOs) for the lower clay till unit. The RAOs for the lower till must be addressed in the (LWP).
  - b. WESTON's comment on Subsection 1.3.1, Page 1-3 has not been addressed. Please indicate the retention basin located south of the Lockformer Building on figures depicting the existing site topography.
  - c. WESTON's comment on Subsection 1.3.1, Page 1-4, has not been addressed. Please include a discussion on the historical drainage ways indicated on Figure 25 of the Quality Assurance Project Plan (QAPP).
  - d. WESTON's comment on Subsection 1.3.3, Page 1-7, requested inclusion of





Mr. Steve Faryan  
U.S. EPA

-2-

17 May 2002

potentiometric surface maps for monitoring wells screened in the mass waste unit and those screened in the bedrock. Please include said maps.

- e. WESTON's comments regarding Figures 2.1-5G and -5H requested that contours be modified for the extent-of-contamination map to include those soil samples collected from the unsaturated portion of the mass waste unit. WESTON further recommends that Clayton/Lockformer prepare an extent-of-contamination map for the surface of the lower clay till to help the involved parties' understanding of the contaminant distribution for the areas where a carbon source addition is proposed.
- f. WESTON's comment on Subsection 5.1, Paragraph 2, Sentence 2, asked that confirmation samples be included outside the perimeter of the ERH treatment zone. The samples were not included in the revised Remedial Action Work Plan (RAWP). Please include confirmation samples along the perimeter of the ERH treatment areas, outside of the area of influence of the ERH system.
- g. WESTON's general comment on Subsection 5.1.3 has not been addressed. Please provide a discussion of the potential implementability issues that may arise using ERH at the site as well as measures to counter these issues.
- h. WESTON's comment on Subsection 5.1.4, Page 5-9, Paragraph 5 has not been adequately clarified. Does Clayton/Lockformer intend to use the existing asphalt in Area 1 as part of the plenum or will this asphalt be replaced and the plenum profile presented in Figure 4.1-5 be constructed?
- i. Although a good effort was undertaken to address WESTON's general comment on Subsection 5.1.5 regarding system removal, it remains uncertain how the vacuum piezometers and soil vapor extraction (SVE) wells will be removed/abandoned.
- j. WESTON's Comment #1 on Subsection 5.2.5 requested that a minimum continuous operation time be defined. The minimum continuous operation time has not been provided. Please provide in the LWP a specific minimum time that the SVE system will be continuously operated.
- k. WESTON's comments regarding unique identifier assignment to each electrode (Figure 5.1-1), SVE well (Figure 5.2-1), and pressure monitoring point (Figure 5.2-7) were not adequately addressed. Although it is unnecessary to provide these identifiers at this point, this task should be accomplished in the design documents



Mr. Steve Faryan  
U.S. EPA

-3-

17 May 2002

that will be prepared subsequent to the upcoming investigation and pilot testing for the ERH and SVE systems.

1. In WESTON's comment on Section 6.0, Page 6-1, Paragraph 2, confirmation samples were requested for the lower clay till unit. The confirmation sampling program has not been developed for this unit. Preparation of this confirmation sampling plan may be premature until after pilot testing of the carbon source addition treatment technology; however, this program should be developed and included in the design for treatment of this unit after a technology has been selected.
- m. WESTON's second general comment on Section 6.0 asked that confirmation samples be included outside the perimeter of the SVE treatment zone. Please include confirmation samples along the perimeter of the SVE treatment areas, outside of the area of influence of the SVE system.
2. The QAPP does not include information for much of the sampling, instrument calibration, and analyses that will be performed throughout the duration of the project (e.g., process water sampling, air sampling, vacuum piezometer [soil gas] sampling, temperature monitoring, pressure/air flow monitoring, analyses performed as part of the lower clay remedy, etc.). It seems that only those portions of the project associated with additional investigation are addressed. Sampling associated with implementation of the removal action is not discussed. The QAPP must include sampling methods, sampling procedures, analytical methods etc. for sampling and monitoring and confirmatory sampling to be performed during site remediation to ensure that the RAO's are met.

The QAPP does not follow the correct guidance document; therefore, it is not in the correct format, does not fully contain the correct content of a QAPP, and does not follow the requirements for data quality objectives. The QAPP should follow either U.S. Environmental Protection Agency (U.S. EPA) QA/G-5 Guidance on Quality Assurance Project Plans (Feb 98), or EPA QA/R-5 - U.S. EPA Requirements for Quality Assurance Project Plans (March 2001).

The Standard Operating Procedures (SOPs) submitted in Attachment A of the QAPP are primarily general in nature. Many of the SOPs cover several options for achieving a certain goal (e.g., well development, well purging, well sampling methods, etc.). The purpose of a QAPP/Field Sampling Plan (FSP) is to lay out the procedures that will be implemented for each task for a specific project. Referencing SOPs that include multiple options does not specify how work will actually be conducted. The text within the QAPP/FSP does not



Mr. Steve Faryan  
U.S. EPA

-4-

17 May 2002

provide enough information to determine which procedures will be used in many instances. In addition, the QAPP provides guidance that is in conflict with the referenced SOPs in other instances. When feasible, these generalizations and conflicts are presented in specific comments that follow. WESTON recommends that the QAPP text be revised to specify the actual procedures that will be implemented and to confirm that all discrepancies are resolved.

3. Although WESTON does not oppose investigation of reductive dechlorination as a potential treatment technology for the lower clay till, WESTON does have several concerns regarding the implementation of such a technology.
  - a. Since the SVE process may be a competing process due to the oxygen drawn into the soil treatment volume, implementation of reductive dechlorination may require that the SVE system be inoperative or operating at low frequency pulsing mode (i.e., online 25%) to minimize influence of oxygen replenishment in areas where reducing conditions are desired. It may be several years before the SVE system is operated at the frequency required to minimize competition with the reductive dechlorination treatment process.
  - b. Many areas of the lower till are apparently unsaturated; consequently, reductive chlorination may have limited effectiveness or be ineffective in remediating unsaturated soil. Artificial recharge may be required to create pseudo-saturated conditions required to facilitate the reductive dechlorination. Injecting the chemicals and water into the subsurface via wells may promulgate compliance with underground injection well regulations (i.e., permitting requirements, sampling, and compliance with setback zones).
  - c. Since the carbon source addition and SVE could be a competing process, how will the reliable data be collected for the pilot test when the SVE system is expected to be in operation during pilot test.
  - d. Other concerns include achieving appropriate distribution of injected compounds and installing and installing an appropriate monitoring system to ensure that the reductive chlorination is occurring, etc.

#### **SPECIFIC COMMENTS:**

1. Page 1-1, Bullet #1: Insert as last sentence of bullet



Mr. Steve Faryan  
U.S. EPA

-5-

17 May 2002

"Although investigation of Area 3 is required by U.S. EPA Removal Section, remediation of soil and groundwater in Area 3 may be performed under this UAO or another federal or state program depending upon the decision made by the regulatory agencies."

2. Page 1-1: Revise bullet #2 to state

"The LWP describes additional investigation of Areas 1, 2, and 3, and remediation of soil in Areas 1 and 2."

3. Page 1-1, Bullet #3: Insert "Areas 1, 2, and 3" in place of "Areas 1 and 2."

4. Page 1-2, First Bullet #5: Add as last sentences of bullet

"Although investigation of Area 3 is required by U.S. EPA Removal Section, remediation of soil and groundwater in Area 3 may be performed under this UAO or another federal or state program depending upon the decision made by the regulatory agencies."

5. Page 1-2, Bullet1: Add as new bullet

"Perform the treatability and pilot studies for the proposed remedies, as needed."

6. Page 1-2, Bullet 3: Replace "Remedial" with "Removal." Replace "RAO's" with RAOs.

7. Page 1-4, Second Paragraph: Insert as last sentence of paragraph

"Based on the historical topography of the site as depicted in Figures 1.3-1 and 1.3-3, prior to construction of the retention basin the bottom of the retention basin was approximately the same elevation as the existing ground surface."

8. Page 1-5, First Line: Replace "725 " with "720."

9. Figure 1.3-1: Add date to map reference.

10. Tables 2.1-1, -2, -3, -4, and -4A: The RAO for bromomethane in surficial clay till/fill should be 15milligrams per kilogram ( mg/kg). RAO for chloroform in the surficial clay till/fill



Mr. Steve Faryan  
U.S. EPA

-6-

17 May 2002

layer should be 0.6 mg/kg. The soil objective for chloroform in Area 3 and the stormwater manways should be 0.54 mg/kg.

Revise note "a" in Tables 2.1-1, -2, -4, and -4A to read

"Value based on industrial/commercial worker soil remediation objective for inhalation pathway contained in 35 IAC 742, Appendix B, Table B."

Replace "industrial/commercial inhalation exposure route" with "soil component of groundwater ingestion pathway (Class I groundwater)" in note "b" for Tables 2.1-1, -2, -4, and -4A.

RAO for chloroform in Table 2.1-3 should be 0.54 mg/kg, and note "\*" of Table 2.1-3 should refer to Table B not Table A.

11. Table 2.2-1, Note a: The reference should be to Table B, not Table A.
12. Page 3-1, Subsection 3.0: RAOs have been developed for Area 3 in the QAPP. These RAOs should be included in this section and in Table 3.0-1.
13. Page 3-1: Insert as last line of first paragraph  

"The RAOs for the lower clay till are based on the Soil Component of the Groundwater Ingestion Pathway (Class I groundwater), as included in 35 IAC 742, Appendix B, Table B."
14. Table 3.0-1: Add "and Lower Clay Till" following "Mass Waste Unit" in right column header. The bromomethane RAO for surficial silty clay till/fill should be 15.0 mg/kg, and the RAO for chloroform in mass waste unit should be 0.6 mg/kg.
15. Table 3.0-1, Note a: Revise note to read:  

"Value based on industrial/commercial worker soil remediation objective for inhalation pathway contained in 35 IAC 742, Appendix B, Table B."
16. Table 3.0-1, Note b: Replace "industrial/commercial inhalation exposure route" with "soil component of groundwater ingestion pathway (Class I groundwater)."



Mr. Steve Faryan  
U.S. EPA

-7-

17 May 2002

17. Page 4-1, Paragraph 3, Line 3: Replace "Remedial" with "Removal."
18. Page 4-2, Sixth Line: Replace "previously described" with "described in the Field Sampling Plan (see Volume III of this LWP)."
19. Page 4-2, First Full Paragraph, Last Line: Replace "3.1 and 3.2" with "3.0."
20. Page 4-6, Subsection 4.1.3, First Paragraph: U.S. EPA did not conclude that ERH was the most effective approach to remediate the surficial silty clay till/fill unit. U.S. EPA has only approved implementation of the ERH technology at the site based on information provided by Clayton and their ERH consultant. Revise the last sentence of this paragraph to read  
  
"ERH has been approved by U.S. EPA for implementation at the site and determined by Clayton to be the most effective...."
21. Page 4-8, Section 4.1.4: Insert after the first paragraph  
  
"All equipment and components will be designed to operate in all-weather conditions. The treatment systems will be capable of four-season operation under all ambient atmospheric conditions. This will include provisions for operation of equipment during extreme heat as well as extreme temperatures below the freezing point. Insulation, heat tracing, equipment buildings, etc., will be considered to facilitate system operation year round."
22. Page 4-8, Last Paragraph: Only 75 electrodes are indicated on Figure 4.1-1 (35 in Area 1 and 40 in Area 2). The diagonal electrodes are not indicated on Figure 4.1-1, nor is an example electrode construction diagram provided.
23. Page 4-10, Paragraph 3: Figure 4.1-1 does not indicate the diagonal electrodes under the building. Based on an anticipated 43 electrodes for Area 1, and assuming the 35 Area 1 electrodes shown on Figure 4.1-1 are vertical electrodes, installation of seven diagonal electrodes will bring the total number of electrodes to 42. Please revise as appropriate.
24. Page 4-11, Paragraph 1: Figure 4.1-1 only shows six temperature monitoring probes (TMPs). Please indicate installation of the seventh TMP in the southwestern portion of the ERH treatment zone for Area 1.
25. Page 4-12 First Full Paragraph, Sentence 1: Replace "0 feet bgs" with "10 feet bgs."



Mr. Steve Faryan  
U.S. EPA

-8-

17 May 2002

26. Page 4-14, Paragraph 1: In the third sentence, insert "or VOC concentrations exceeding established baseline conditions" after "positive pressure." The sampling frequency of these vacuum piezometers should be specified as well as how baseline VOC levels will be established. A SOP for the measurement of pressure and VOC levels should be developed as well as a log for recording the measurement results.
27. Page 4-17, Paragraph 1, Sentence 3: Clayton must immediately ensure that the transformer has adequate capacity to operate the ERH and SVE systems simultaneously to prevent delays to the project schedule.
28. Page 4-18, First Full Paragraph, Last Sentence: The exclusion zone (which WESTON understands to be the chain-link fence surrounding the ERH treatment areas) should be designed such that there is no measurable voltage beyond the fence line.
29. Page 4-19, Last Sentence: Replace "shutdown" with "shakedown and startup."
30. Page 4-28, Paragraph 2, Sentence 3: Insert "and the floor sealed as necessary within" after "A curbed area will be constructed around the perimeter of."
31. Page 4-29, Last Paragraph, Sentence 2: Clarify whether each wellhead will have a vacuum/flow measuring station such that flow and pressure can be measured at each wellhead (the terminology of "manifold pipe" may be interpreted in alternate manners). Later in the LWP (Attachment 4-B, Appendix A, page A-2) it is indicated that there will be a design airflow rate at each VE well that will be attained, which would need such a station at each wellhead. In addition, a comment should be inserted that each well will be installed with a control valve such that the flow from each well may be reduced or shut off. It is important to have these monitoring points and flow controls for balancing the system and to ensure that wells furthest from the blower have adequate air flow and are capable of achieving the designed zone of influence.
32. Page 4-33, Paragraph 1, Sentence 3: The term "periodically" should be quantified for clarification. At minimum, this sampling frequency must meet the permit/publically owned treatment works (POTW) requirements and identify breakthrough of the primary treatment vessel. WESTON further recommends that the sampling of each batch be performed initially to verify that there is adequate treatment of the water. Subsequent to the initial rigorous sampling, the sampling frequency may be scaled back to meet the permit/POTW requirements and identify the breakthrough of the primary treatment vessel.





Mr. Steve Faryan  
U.S. EPA

-9-

17 May 2002

33. Page 4-35, Second Full Paragraph: The SVE system must be in operation when the ERH treatment system becomes operative. If rapid loading of the adsorber units is a problem, the SVE system may be operated for a period of time prior to beginning ERH treatment (the first full paragraph on this page assumes that 50% of the TCE mass in the mass waste sand and that the gravel unit may be liberated during the first 30 days of operation of the SVE system). At a minimum, the SVE system must have been installed and passed shakedown prior to startup of ERH system because once ERH system is at operating temperature and the SVE system is turned on, the SVE system must be fully operational. This is because the desorption process will not stop if ERH electricity is cut off due to unfavorable contaminant migration.
34. Page 4-36, Paragraph 2: See comments above regarding startup of ERH system without operation of SVE system. What is the estimated air flow from each well (i.e., basis of 500 scfm).
35. Page 4-36, Paragraph 4: Replace "Area 1" in the third line with "Area 2."
36. Page 4-37, Paragraph 1: Initially, it is said that there will be periodic collection of air samples (second sentence) and then the LWP says that samples will be continuously analyzed (third sentence). Please revise to clarify the sampling frequency (i.e., periodic or continuous), and if periodic, specify the frequency here and in Section 4.5. Replace "Section 4.4" in last sentence of paragraph with "Section 4.5."
37. Page 4-39, Subsection 4.2.5: Specify a minimum operating time for the SVE system. The minimum operating time should allow for collection of all VOCs mobilized from the upper till during ERH treatment activities. In addition, please add a statement that transition from continuous operation to pulsed operation will be approved by the U.S. EPA as will reductions in pulsed operation frequencies (i.e., transition from 75% to 50% operation). When will the pressure monitoring for the SVE system occur? The pressure monitoring points used during the SVE pilot test should be monitored during ERH and SVE treatment within Area 1.
38. Page 4-44, First Full Paragraph, Sentence 1: Add to end of sentence "in Areas 1 and 2 and in the northern portion of Area 3." (Page 1-7 of Section 1 indicates that it has not been verified that the lower clay unit separates the mass waste sand and gravel unit from bedrock in the southern portion Area 3.)
39. Page 4-49, Last Paragraph: What constituents/parameters will be monitored and how will



Mr. Steve Faryan  
U.S. EPA

-10-

17 May 2002

they be measured? Revise fifth sentence to begin "Groundwater from MW-500D...." Use of an injection well may require compliance with underground injection well regulations. If an underground injection well permit is necessary, Clayton/Lockformer should initiate communications to obtain said permit.

40. Page 4-51, Paragraph 2: Quarterly monitoring of the full-scale treatment system is unacceptable. After 30 days of injection, the monitoring well network should be monitored on a more frequent basis (i.e., monthly). What constituents will be monitored? Parameters monitored should include those that are useful for assessing if reductive dechlorination is occurring (e.g., iron, sulfate, total organic carbon, etc.).
41. Page 4-51, Section 4.3.3: Since it is common for the reductive dechlorination process to stagnate at DCE or vinyl chloride and these constituents are aerobically biodegradable, WESTON recommends that if the treatability study indicates that reduction dechlorination of DCE and/or vinyl chloride is not appropriate for the lower clay, the treatability study should be continued to evaluate aerobic degradation of these constituents using an oxygen-enhancing formulation.

In the third bullet, replace one of the "ethane" references with "ethene."

42. Page 4-52, Bullet 3: It says here that vegetable oil will be one of the three amendments evaluated during the treatability study. On Page 4-18, Clayton indicates that vegetable oil is not miscible with water. Since the goal is to evaluate amendments that may be implemented on a full-scale basis, vegetable oil may not be desirable to use for this application since the oil would likely have different migration characteristics than the chlorinated volatile organic compounds (VOCs). This variation in migration characteristics may not facilitate good distribution of the oil with respect to those areas impacted with the chlorinated compounds.
43. Page 4-52, Last Paragraph: Insert as the third sentence of paragraph  

"If possible, soil with relatively high TCE concentrations (i.e., in the mg/kg range) will be submitted for the treatability study."
44. Page 4-53, Paragraphs 1 and 3: Total organic carbon (TOC) should be included in the parameters tested before, during, and at completion of the treatability study. In the third paragraph of this page, iron and sulfate should also be analyzed during and at completion of the treatability study.



Mr. Steve Faryan  
U.S. EPA

-11-

17 May 2002

45. Page 4-54, Second Full Paragraph: Refer to comments above regarding initially sampling each batch of water discharged and subsequently scaling back the frequency.
46. Page 4-56 and 4-57, Subsection 4.5.2.2: If chlorinated VOCs are detected during the determination of background VOC levels, Clayton should provide the results of the air monitoring to U.S. EPA for review prior to implementation of any removal activities.
47. Page 4-59, Paragraph following Bullet List: The regulatory agencies will become aware of impacts to ambient air quality upon review of the quarterly reports. This is unacceptable. Any exceedance of air standards should be immediately reported to the regulatory agencies, and corrective actions implemented immediately. Reports on air quality should be made available to the regulatory agencies as soon as possible as well as summarized in a quarterly report. A statement should also be made within the report that air emissions will comply with all applicable regulations and substantive requirements of any appropriate permits.
48. Page 4-59, Subsection 4.6, Paragraph 1: Insert "and benching" after "drill cuttings."
49. Page 4-61, Last Paragraph and Figure 4.7-1: To maximize the excavation area associated with the degreaser pit, excavation activities may be performed in a phased approach. For example, after restoration of the excavation area depicted in Figure 4.7-1, shelving may be relocated, and excavation in other contaminated areas may be implemented.
50. Page 4-62, Bullet #1: Will non-40-hour HAZWOPER trained persons be allowed to access the negative air containment zone? It appears that this area encompasses many of the shelf units that Lockformer had indicated were used during normal operations.
51. Page 4-64, Subsection 4.7.6: The backfill should be compacted in lifts during placement to prevent long-term settlement.
52. Figure 4.1-1: Please indicate the diagonal electrodes under the building, the seventh TMP in the southwest portion of the Area 1 ERH treatment zone, and the fence line in a location that will prevent measurable voltage outside the exclusion zone.
53. Figure 4.2-4: Additional pressure monitoring probes should be included within the zone of influence of the SVE system. Also there could be preferential flow path for air and potential for short circuiting along the sewer lines within the area of through the
54. Figure 4.1-9: The hatching used to identify the remediation equipment area is identical to



Mr. Steve Faryan  
U.S. EPA

-12-

17 May 2002

that used to depict the area where electrodes will be installed under the building. Please revise hatching of remediation equipment area.

The revisions to Figure 4.1-1, as indicated in the above comments, should also be implemented for Figure 4.1-9. Will the easternmost horizontal VR well have sufficient zone of influence to capture vapors from under the Lockformer Building or are additional horizontal VR wells under the building warranted? In addition, migration of VOCs may occur along the bedding material for subsurface utilities present in Area 1 as well as the sub-base material underlying the Lockformer Building. How will this be mitigated?

55. Figure 4.1-10: The revisions to Figure 4.1-1, as indicated above comments, should also be implemented for Figure 4.1-9.
56. Figure 4.2-4: The contour depicting soil in the mass waste unit containing TCE at concentrations  $>0.06$  mg/kg should encompass MW-522. It should also include any other sampling locations where a sample was collected from the unsaturated zone of the mass waste unit containing constituent concentrations at levels exceeding the RAOs.
57. Figure 4.2-6: Will the aboveground storage tank (AST) be removed (per discussions between U.S. EPA and a Representative of Lockformer)? If so, please indicate as appropriate in the text.
58. Attachment 4-A, Page vi, Paragraph 1: The fourth sentence, "Subsurface temperatures are increased to the boiling point of groundwater...." is incomplete. Please revise.
59. Attachment 4-A, Page 3: Insert "Plenum" as the third bullet in list.
60. Attachment 4-A, Page 8, Subsection 3.13: For quality assurance (QA), a QA Manager has been identified. The role of QA Manager is inadequate. Please identify who will perform the following QA tasks:
  - a. Review conformance of material and equipment to meet design specifications;
  - b. Conduct periodic inspections of site during construction;
  - c. Administer the QA program;
  - d. Certify the Construction Completion Report.



Mr. Steve Faryan  
U.S. EPA

-13-

17 May 2002

61. Attachment 4-A, Page 9, Subsection 3.14: QA is the responsibility of the Clayton QA Manager. The QA Manager should be independent of the Project and Field Managers; therefore, QA of materials or equipment should be independently assessed by the QA Manager and reported to the Project and Field Managers. The Project and Field Managers should not report to the QA Manager.
62. Attachment 4-A, Page 9, Subsection 3.14: Please clarify "Clayton's QA personnel." The Clayton QA Manager should be in the position to evaluate and ensure that the Thermal system employed meets specifications and performance standards.
63. Attachment 4-A, Page 19, Section 6.0: Add a bullet that states  
  
"QC certificates will accompany the material, as necessary."
64. Attachment 4-A, Page 21, Subsection 6.3: Who will perform the inspections of incoming materials and equipment?
65. Attachment 4-A, Page 23, Section 7.0: Who from Clayton will perform the inspections identified in this section?
66. Attachment 4-A, Page 23, Subsection 7.1: Add that quality control (QC) certification will be reviewed to ensure that materials and supplies are in conformance with specifications. Who from Clayton will perform the QA checks?
67. Attachment 4-A, Page 23, Subsection 7.2: Who from Clayton will perform the inspections identified in this section?
68. Attachment 4-A, Page 25, Second Full Paragraph: All drilling locations should be surveyed. Please delete "If required in the ERH design," from the beginning of the third sentence of paragraph. All utilities should be located prior to drilling. Please indicate that a utility clearance will be performed prior to drilling.
69. Attachment 4-A, Page 26, Paragraph 1: Insert as the last sentence of paragraph  
  
"All equipment requiring calibration will be calibrated in accordance with the manufacturer's specifications."
70. Attachment 4-A, page 27, Section 8.0: Although the Thermal QA Manager may inspect



Mr. Steve Faryan  
U.S. EPA

-14-

17 May 2002

materials and equipment, the Clayton QA Manager has the ultimate responsibility to ensure that all materials and equipment are in conformance with the specifications.

71. Attachment 4-A, Page 30, Paragraph 2: Subsection 4.1.4.3 and Figures 4.1-2 and 4.1-3 of the LWP indicate that each electrode will have a vapor recovery well nested in the same boring, yet here it is indicated that approximately half of the electrodes will have associated vapor recovery wells. Is the intention to communicate that only the electrodes in Area 2 will have vertical vapor recovery wells nested in the electrode borings? Please clarify and revise LWP/Attachment 4-A as appropriate. Remove end parentheses “)” following “ERH” from fourth line.
72. Attachment 4-A, Page 34, Table 5: In the “Vapor Treatment” row, under the “Specifications” column, replace “??” with “1,800” (Per pages 4-35 and 4-37 of Subsection 4.2.3).
73. Attachment 4-A, Page 36, Table 7: Air sampling equipment (Thermo samplers) should be included in the table. If the weather monitoring equipment requires calibration (factory or otherwise), it should also be included in table.
74. Attachment 4-A, Page 38, Second Paragraph, Last Line: Which portion(s) of Area 1 will not be covered by plenum? Does this refer to areas outside of the ERH remediation area? It is WESTON’s understanding that a plenum will cover the entirety of the ERH treatment areas, and in Area 1, the horizontal recovery lines will be under the plenum. Please clarify.
75. Attachment 4-A, Page 39, Second Full Paragraph, Last Sentence: WESTON recommends performing regular visual inspection of exposed piping runs to identify cracks and ambient air monitoring at joints to identify VOC leaks for those runs of pipe not under negative pressure. This may alternately be done by periodic pressure/vacuum testing of lines.
76. Attachment 4-A, Appendix A, Page A-3, Bullet #8: Clarify whether each wellhead will have a vacuum/flow measuring station such that flow and pressure can be measured at each wellhead. Since there is a design airflow rate at each VR well, such a station is needed at each wellhead. In addition, a comment should be inserted that a control valve will be installed in each well such that the flow from each well may be reduced or shut off. It is important to have these monitoring points and flow controls such that the system can be balanced to ensure that wells furthest extraction point from the blower will have adequate air flow to achieve required zone of influence.



Mr. Steve Faryan  
U.S. EPA

-15-

17 May 2002

77. Attachment 4-B, General: Please implement the comments regarding QA organization and responsibilities for Attachment 4-A as appropriate in Attachment 4-B.
78. Attachment 4-B, Page 20, Paragraph 2: Delete "If required in the SVE design" from the beginning of the fifth sentence.
79. Attachment 4-B, Page 27, Table 5: In the "Vapor Treatment" row, under the "Specifications" column, replace "change-out vessel" with "two change-out vessels" (per page 4-36 of Subsection 4.2.3.10)
80. Attachment 4-B, Page 29, Table 7: Air sampling equipment (Thermo samplers) should be included in the table. If the weather monitoring equipment requires calibration (factory or otherwise), it should also be included in table.
81. Attachment 4-B, Page 30: Replace "Clayton" references in the last sentence of second paragraph and in the first line of paragraph 3 with "thermal."
82. Attachment 4-B, Page 35, Table 8: Will thermal expansion of the SVE piping be an issue if operated concurrent to the ERH system, or will temperatures induced by the ERH system not affect SVE piping? If thermal expansion is a concern with the SVE piping (for the same reasons as the ERH VR piping or due to other influences such as solar radiation), then similar problems will occur as described for the ERH piping on Page 38 of Attachment 4-A.
83. Attachment 4-B, Appendix A, Bullet #2: Will the pipe supports described in Table 8 of Attachment 4-B not act as expansion constraints on the SVE piping?
84. Attachment 4-B, Appendix A, Page A-2, Bullet #6: What is the design flow rate for the VE wells? If this has not been established and if it is dependant upon pilot test, a statement saying that the design flowrate will be specified subsequent to the pilot test should be included.
85. Attachment 4-B, Appendix B: Forms for recording air flowrate and pressure monitoring should be developed and included. Calibration logs for applicable equipment should also be developed and included. This comment also applies to Appendix B of Attachment 4-A.
86. Page 5-1, Paragraph 1: In addition to the final technical memorandum, monthly letter reports should be submitted to U.S. EPA summarizing the removal action efforts. Such information would be include a description of the ERH and SVE systems operation, significant



Mr. Steve Faryan  
U.S. EPA

-16-

17 May 2002

complications experienced with the systems, corrective actions implemented to address complications, and a summary of the data (weather monitoring, air modeling and monitoring results, water monitoring and volume discharged, etc.).

87. Page 5-3, First Full Paragraph: Confirmation samples should be located along/outside the perimeter of the treatment area to confirm that lateral migration has not occurred and that RAOs in these areas are met. Samples outside of the effective treatment area should not be used for averaging.
88. Page 5-3, Third Full Paragraph: The "sub-areas" should be clearly defined in the confirmation sampling plan prior to sample collection. In addition, treatment should be continued to remediate any discrete sample that exceeds 10 mg/kg of TCE in surficial soil.
89. Section 5, General: This section does not address confirmation sampling of lower clay till or the degreaser pit excavation.
90. Page 6-1, Second Paragraph: Copies of all permits and any other such approval letters should be provided to U.S. EPA as they are received by Clayton/Lockformer.
91. Section 7 (Schedule): As indicated in the comments above, startup of the ERH system without concurrent operation of the SVE system is unacceptable. The SVE system should be started before or at the same time that ERH treatment is initiated. At a minimum, the SVE system must have been installed and passed shakedown prior to startup of the ERH system because once the ERH system is at operating temperature and the SVE system is turned on, the SVE system must be fully operational. The desorption process will not stop if ERH electricity is cutoff due to unfavorable contaminant migration.

To counter rapid loading of VOCs to the adsorber units, the SVE system may be installed and operated for a period of time prior to and/or during startup of the ERH system such that the mass waste VOC contribution to the adsorber units is reduced at the time of active ERH treatment. (The LWP assumes half of the VOCs present in the mass waste unit will be liberated during the first 30 days of SVE system operation).

92. QAPP, General Comment: At several locations within the QAPP, the same information utilized in LWP has been provided in the QAPP. Ensure that the changes are made in both documents, as applicable.
93. QAPP, Page 1, Second Line: Replace "presented in" with "under the scope of." (Sampling





Mr. Steve Faryan  
U.S. EPA

-17-

17 May 2002

is not presented in the LWP.)

94. QAPP, Page 1, End of Paragraph 1: The QAPP references the U.S. EPA guidance document entitled *U.S. EPA Region V RCRA QAPP Instructions* (April 1998). This guidance appears to be an incorrect guidance document for this scope of work.
95. QAPP, Page 2, Paragraph 2: A statement should be added that although migration to groundwater is a concern for contaminants present in the upper clay till, the interim cleanup goal (RAOs) for this soil unit are based on the inhalation pathway for the industrial worker receptor population. WESTON believes that the RAOs proposed for Area 3 are appropriate since both the inhalation and migration to groundwater pathways exist (Refer to Table 1).
96. QAPP, Page 2, Paragraph 3, Line 2: Replace "constituents" with "VOCs."
97. QAPP, Page 6, Last Paragraph: Please refer above to LWP comment on the retention basin floor.
98. QAPP, Page 8, Paragraph 2: The existence of the lower clay unit is more appropriately described here than in the LWP. Please revise parallel text in the LWP.
99. QAPP, Page 8, Paragraph 3, Line 3: Insert "to the west and south" following "mass waste sand and gravel slope down."
100. QAPP, Page 9, Bullet #3: Add "(in the vicinity of the former TCE tank fill and vent lines)" to the end of the sentence.
101. QAPP, Page 14, Bullet listed item: Sampling and monitoring during operation of the system and confirmatory sampling program has not been included. Include the sampling and monitoring program in the QAPP.
102. QAPP, Page 15, Paragraph 1: Insert herein that the confirmatory sampling plan will be submitted as an addendum to the QAPP for U.S. EPA approval at later stage.
103. QAPP, Figure 1: Add revision date to map reference.
104. QAPP, Table 1: The RAO values for the silty clay till and mass waste unit are reversed. The header "RAO for Mass Waste Unit" should read "RAO for Mass Waste Unit and Lower Clay Till."



Mr. Steve Faryan  
U.S. EPA

-18-

17 May 2002

The RAO for bromomethane in the surficial clay till/fill should be 15 mg/kg. The RAO for chloroform in the surficial clay till/fill layer should be 0.6 mg/kg. The soil objective for chloroform in Area 3 and the stormwater manways should be 0.54 mg/kg. The correct groundwater objectives for the following constituents should be as follows:

bromodichloromethane - 0.0002 mg/L  
bromoform - 0.001 mg/L  
bromomethane - 0.0098 mg/L  
chloroform - 0.0002 mg/L  
1,1-dichloroethene - 0.007 mg/L  
cis-1,2-dichloroethene - 0.07 mg/L  
Join cells for cis- and trans-1,3-dichloropropene (objective of 0.001 mg/L is for total 1,3-dichloropropene)  
1,1,2-trichloroethane - 0.005 mg/L

105. QAPP, Table 1, Note a: Revise note to read

“Value based on industrial/commercial worker soil remediation objective for inhalation pathway contained in 35 IAC 742, Appendix B, Table B.”

106. QAPP, Table 1, Note b: Replace “industrial/commercial inhalation exposure route” with “soil component of groundwater ingestion pathway (Class I groundwater).”

107. QAPP, Table 1: Note for “Area 3 Soil Objective” should read

“Most conservative value contained in Appendix B, Table B of 35 IAC 742.”

108. QAPP, Tables 2, 3, 4, and 5: Refer to comments above regarding the soil RAOs and the footnotes of Table 1.

109. QAPP, Tables 7, 8, 9: Revise groundwater remediation objectives according to the above-provided comments. In addition, the objectives for Class II groundwater are incorrect for the following constituents: bromodichloromethane, bromoform, bromomethane, chloroform, 1,1-dichloroethene, and 1,1,2-trichloroethane.

110. QAPP, Table 11, Note a: Revise note to read

“Most conservative value contained in Appendix B, Table B of 35 IAC 742.”



Mr. Steve Faryan  
U.S. EPA

-19-

17 May 2002

111. QAPP, Page 12, Subsection 1.4: This section does not adequately address Data Quality Objectives (DQOs). Proper DQO protocols are addressed in the U.S. EPA QA/G-5 and U.S. EPA QA/R-5 documents as well as Guidance for the Data Quality Objective Process G-4 and G-4HW.
112. QAPP, Page 14, Subsection 1.5: The FSP is broken down into sections that include additional soil sampling in Area 1, additional soil sampling in Area 2, and additional soil and groundwater investigations in Area 3. These sections are missing a table that summarizes the anticipated sampling program. The table must indicate the number of investigative samples per media per analysis, laboratory analysis method, field parameter measurements, field duplicates, field blanks, trip blanks, and matrix spike/matrix spike duplicate (MS/MSD) samples. If the number of investigative samples is uncertain, a range should be included along with the associated QC samples. The table should include the confirmatory samples and samples that will be collected during remediation.
113. QAPP, Page 15, Paragraph 1: Clayton Laboratory is identified as the laboratory that will provide sample analysis for the project. This appears to pose a potential conflict of interest. Please clarify the relationship between the Group Services and the laboratory and how legally defensible data will be ensured for the client and for U.S. EPA. Providing that U.S. EPA deems this arrangement acceptable, 100% of the data validation should be conducted by an unrelated third party, neither Clayton Group Services or Clayton Laboratory. If samples are sent to Clayton Laboratory for analysis, WESTON recommends U.S. EPA to submit split samples sent to an outside laboratory for confirmation.
114. QAPP, Page 17, Paragraph 2: The intent of these borings was to also provide information regarding the contaminant distribution along the lower clay till surface. Since these borings are being advanced to the top of this clay, WESTON recommends collection of a soil sample from the upper surface of the lower clay at each of these boring locations for analysis of VOCs.
115. QAPP, Page 18, Paragraph 3: See above comment regarding sample collection from the lower clay surface.
116. QAPP, Page 19, Paragraph 3: Figure 22 only shows two boring locations east/west of borings CSB-1558/CSB-1570(MW-1115), both of which contained groundwater above the objectives presented in Subsection 1.1. The text here states that three consecutive borings will be advanced to demonstrate constituent concentrations in both soil and groundwater below the objectives. Figure 22 should indicate additional borings east/west of the proposed



Mr. Steve Faryan  
U.S. EPA

-20-

17 May 2002

borings CSB2109/CSB2111.

WESTON assumes that this sampling effort will be phased such that analytical results from the soil and groundwater samples collected along the sewer line are evaluated. Then additional "step-out" borings will be performed beyond the initial three borings. The logistical aspect of the sampling to be performed along the sewer line should be clarified.

WESTON further assumes that Clayton/Lockformer are planning to extend the objectives presented in Subsection 1.1 to apply to the areas outside of Area 3. Prior to application of these objectives, a comparison of the migration to Class I groundwater standards versus residential soil cleanup standards must be done to develop the objectives for off-site areas as the off-site areas may not be considered to be industrial/commercial properties.

117. QAPP, Page 19, Subsection 1.5.3.1: WESTON had previously recommended that boring CSB-1528 be continued to a depth of 22 ft bgs. WESTON still recommends this task.
118. QAPP, Page 20, Paragraph 3: The QAPP states that well screens will be positioned 8 feet below the water table. The referenced SOP 210 states that monitoring well screens are installed at the level of the water table. Please revise for consistency or clarify the portions of the SOP that are applicable to the project. In addition, the QAPP text states that a minimum 2-foot bentonite seal should be installed above the filter pack. SOP 210 states at least 3 feet of bentonite seal. The QAPP states that a bentonite grout will be installed to within 5 feet bgs. SOP 210 states to grout to 2 feet bgs. Please clarify.
119. QAPP, Page 21, Paragraph 2: The QAPP states here that wells will be developed in accordance with SOP 212. SOP 212 provides multiple methods of well development. Please state in the QAPP text which method will be instituted for this project.
120. QAPP, Page 21, Paragraph 4: What efforts have been performed to date to obtain access to the railroad property?
121. QAPP, Page 23, Last Paragraph: It states here that wells will be sampled in accordance with SOP 410. SOP 410 provides multiple methods of sampling. Please state in the QAPP text the method that will be instituted for this project. WESTON recommends using low-flow sampling. In addition, stabilization criteria in SOP 410 (under 2.3.1 B) should include a criterion for turbidity (i.e., +/- 10 percent). Furthermore, SOP 410 is inconsistent in defining the stabilization criteria. Temperature, pH, and specific conductance criteria are established under 2.3.1 B; however, later in the SOP, the text states that the field measurements should



Mr. Steve Faryan  
U.S. EPA

-21-

17 May 2002

be consistent within a 10 percent variance. Please revise the SOP for consistency.

122. QAPP, Page 24, Paragraph 1: Although WESTON had requested these borings to extend to the top of the lower till unit, the QAPP indicates these borings will only be advanced to the top of the mass waste unit (with the exception of CSB1906). This is acceptable contingent that if elevated head space readings are observed at the surficial clay till/fill and mass waste unit interface, these borings will be advanced to below the zone not exhibiting evidence of impact or to groundwater is encountered.
123. QAPP, Page 25, Last Paragraph: Please state where on-site soil cuttings will be staged.
124. QAPP, Page 26, Paragraph 1: What will groundwater be stored in and where will it be staged?
125. QAPP, Page 28, Subsection 2.3.1: The QA officer cannot report to the Project Manager. This can compromise quality. There should be a line of communication but not authority.
126. QAPP, Page 35, Paragraph 2: Will resampling also occur if invalid soil results are obtained?
127. QAPP, Page 37, Subsection 3.6: With what frequency will field blank and equipment/rinsate blanks be collected (if at all)? Standard protocol is to collect field blanks at a 1 per 10 frequency with field blank duplicates also at a 1 per 10 frequency.

The last paragraph on the page states that MS/MSD samples do not require extra volume for VOC analysis. Please confirm this with the laboratory. Soil samples submitted for VOC analysis should be collected in Encore samplers or preserved with sodium bisulfate or methanol in the field. These procedures typically require additional volume for soil volatile MS/MSD analysis. In addition, if only enough sample media will be collected to facilitate VOC analysis (via either the Encore, sodium bisulfate, or methanol techniques), additional sample media must be collected for percent moisture analysis. Please revise the QAPP to address this comment as appropriate.

128. QAPP, Page 39, Subsection 4.0: This section lists multiple SOPs. As previously stated, these SOPs are relatively generic in nature and conflict the QAPP text in some cases. Terms and procedures must be consistent throughout the QAPP documentation to ensure legally defensible, quality data. Some comments regarding SOPs have been discussed in previous comments; however, additional specific comments associated with the SOPs are detailed below:



Mr. Steve Faryan  
U.S. EPA

-22-

17 May 2002

- a. SOP 212 - Well Development: This SOP states that pH, specific conductance, dissolved oxygen, temperature, and relative turbidity should be included. The QAPP text does not state which parameters will be measured/monitored. Please revise the QAPP text to state that all of the above parameters will be measured/monitored during well development and sampling. Please include parameter stability for turbidity and include in the corresponding SOP 320. Turbidity should be measured in the field and should not be based solely on visual observations.
- b. SOP 500 - Equipment Decontamination - 2.4 Sampling Equipment Decontamination Procedures: Letter E discussing pump decontamination is unacceptable. All pumps should be cleaned and flushed with a water/detergent solution (i.e. Alconox and tap water), followed by a tap water rinse, followed by a distilled water final rinse. If tubing is reused from location to location, it must undergo the same decontamination procedure. It must also be ensured that sufficient rinse water has been run through the pump and tubing to flush out all of the wash water and tap rinse water. If tubing is to be reused, it should be specified in the QAPP and promulgates the requirement for equipment/rinsate sample collection.
- c. SOP 910 - Sample Containers, Preservation, and Holding Times: The container and preservation requirements for the water organic section is incomplete. It should include 40 mL glass vials prepreserved with hydrochloric acid (HCl) for volatile organic analysis. It should also state how many vials are required per sample and should state that samples must be cooled to  $4 \pm 2$  degrees Centigrade immediately after sample collection.

The soil sample section should include Encore samplers as a sample container if applicable to this project. Use of Encore samplers may be desirable as the Encore samplers reduce the shipping restrictions that methanol can require.

The SOP refers to the QAPP for holding times. This information does not appear to be incorporated into the QAPP for soil and aqueous volatiles and any other analysis that may be conducted. Specific containers, preservatives, and holding times are easiest to present and reviewed in tabular format.

- d. SOP 911 - Sample Classification, Storage, Packaging, and Shipment: The SOP states that shipping and handling must be in compliance with U.S. Department of Transportation (U.S. DOT) regulations. Shipping and handling must also be in compliance with current ICAO/IATA regulations governing air transportation (i.e.,



Mr. Steve Faryan  
U.S. EPA

-23-

17 May 2002

Federal Express). The SOP should be revised to ensure compliance with these regulations.

- e. SOP 912 - Sample Control and Custody Procedures - Figure 912-2: Please provide a copy of a chain-of-custody form that would be applicable to this project.
  - f. SOP 930 - Control, Calibration, and Maintenance of Measurement and Test Frequency: Based on the SOP, WESTON understands that a Horiba U-10 Water Quality Meter will be used for well development, purging, and sampling. If a different or any additional meter(s) will be used (i.e., Nephelometer), information for these must also be included.
129. QAPP, Pages 42 and 43: These pages include codes for soil boring, monitoring well, trip blank, rinse blank, and duplicate samples. How will the groundwater samples collected from the temporary wells in Area 3 (Subsection 1.5.3.1 - Area 3 Soil Borings) be named? How will the groundwater samples collected in the surface drainage way (Subsection 1.5.5 - Additional Surficial Drainage Way Sampling) be named? Is the term rinse blank and field blank being used interchangeably? Please clarify and provide additional sample identification system examples as necessary.
130. QAPP, Page 43, Subsection 5.2: Laboratory custody procedures (e.g., receiving, log-in, etc.) are required for inclusion in the QAPP. Please provide these specific laboratory SOPs. Complete laboratory QA manuals should not be submitted.
131. QAPP, Page 45, Subsection 6.1: Field instruments should be calibrated daily prior to use, at the middle of the day (approximately 4 hours), and after any questionable reading or instrument error message. Please include an instrument for measuring turbidity in the list of field equipment (second sentence of paragraph).
132. QAPP, Page 51, Subsection 9.2.2: Data should be validated in accordance with the stated method, the laboratory-specific SOP, and in conjunction with the U.S. EPA National Functional Guidelines for Organic Data Review (Oct 1999), as it is applicable. WESTON recommends that a third party validate the data if the Clayton Group is permitted to use its own laboratory for analysis. In addition, any laboratory cannot be responsible for final data validation as many of the QC samples are apparently blind and unknown to the laboratory (based on the sample identifier codes presented in the QAPP). A thorough data validation is required by a party other than laboratory.



Mr. Steve Faryan  
U.S. EPA

-24-

17 May 2002

133. QAPP, Page 55, Subsection 10.1.2.1: External field audits may be conducted by the U.S. EPA On Scene Coordinator or his/her designee, not a U.S. EPA Permit Writer. Please revise this text.
134. QAPP, Page 55, Subsection 10.2.2.1: An external audit may be conducted by U.S. EPA Region V Field Services Section or its designee, not the CRL. Please revise.
135. QAPP, Page 55, Subsection 11.1: Refer to the specific comment above regarding calibration frequency.
136. QAPP, Figure 21: Please revise to include identifiers for the existing borings.
137. QAPP, Figure 27: The chart needs to identify lines of communication as well as lines of authority. For example, the Project Manager cannot have authority over the QA Officer. Subcontractors should be included on the chart (i.e. drilling, surveying, etc).
138. QAPP, Table 13: Was the MDL study information provided by Clayton Laboratory? When was the MDL study conducted? MDL studies are typically conducted on a yearly basis. Soil RQLs appear to be for low level analysis only; however, it appears that soil volatile samples will be collected for low and medium-level analysis (sodium bisulfate preserved and methanol preserved). Do the low and medium-level analysis have the same RQLs?

Should you have any questions or require additional information, please feel free to contact me.

Very truly yours,

ROY F. WESTON, INC.

A handwritten signature in black ink, appearing to read "Brian Voss".

Brian Voss  
Project Engineer

A handwritten signature in black ink, appearing to read "Omprakash S. Patel".

Omprakash S. Patel  
Project Manager



## IEPA Comments:

- Reject proposal for new well locations
- Go to Original Plan Locations
  - ~~• Original Bed Rock Well Installed~~
  - ~~SD into Bed Rock~~

John Sherrill:  
• Order Panels, install electricals, approval of system  
• Put together Agenda for Canyon Met

• QAAD/ SOPs

• Prelim approval to conduct Delineation Sampling  
SUE Pilot Study

Deadline  
Field Sampling 2/15  
Otherwise Work Plan  
Contracts

• Reject Canyon Source Proposal: (for Area 2) EPH  
• Wells along Chicago Ave. (2 wells)

• IEPA will recommend hole-up of homes on Chicago

• No Pump tests (may be better in area 3)  
that's where pumps + test

• Canyon will have to propose pump + or  
that's like active remediation/active?  
Containment Pump Groundwater

• Need for remedial action in area 2 at depth <sup>EPH is not possible</sup>

• Risk Assessment & Clean-up Values (IEPA will discuss)

• IEPA Ground Water Protection Act (GWDO)

• Enforcement will go through the AG's office

• [Peeled water is Ground water]

• Statistical approach:

Verification Sampling

Max of 10 ppm

• No Sampling on Surface Drainage Way

Fig 25

Connect that if done by others  
containing sampling into the  
neighborhood

• CJB- 1509 [B.W. go deeper on boring]

• Property Access is left up to U.S. EPA

• Schedule to be submitted (several months on GW data)  
conduct on panel tracks



Mr. Steve Faryan  
U.S. EPA

-24-

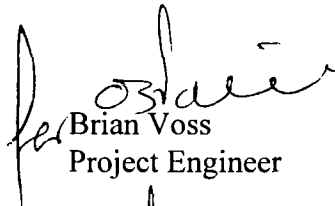
13 May 2002

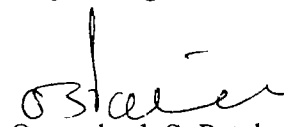
137. QAPP, Table 13: Was the MDL study information provided by Clayton Laboratory? When was the MDL study conducted? MDL studies are typically conducted on a yearly basis. Soil RQLs appear to be for low level analysis only; however, it appears that soil volatile samples will be collected for low and medium-level analysis (sodium bisulfate preserved and methanol preserved). Do the low and medium-level analysis have the same RQLs?

Should you have any questions or require additional information, please feel free to contact me.

Very truly yours,

ROY F. WESTON, INC.

  
for Brian Voss  
Project Engineer

  
Omprakash S. Patel  
Project Manager